Control System Hardware

The Linac Upgrade control system hardware was installed in the Alvarez Linac in March 1992 and has been in use as an operational system since that time. The Alvarez Linac control system was replaced in order to make it the same as the control system for the Klystron stations. All of the local control stations for the Klystrons were installed and operating by October 1992. Very few hardware changes have been made to these systems after installation. During the past six months of online operation, the control system has been charged with less than 30 minutes of Linac downtime.

Linac equipment to be monitored and controlled are connected to Smart Rack Monitors, 2U self powered chassis that contain A-Ds, D-As, digital input and digital output. These chassis contain a processor and an Arcnet LAN interface to interconnect several of them to their controlling VMEbus crate. The VMEbus crates in turn are connected to a token ring network to make the Linac data available to other computers on the network, including ACNET nodes.

The overall plan of the Linac control system was discussed in Ref 1 although that paper was written before the decision was made to use SRMs for data acquisition. The SRM itself is described in Ref 2.

References:

1. Upgrading the Fermilab Linac Local Control System, E. S.. McCrory, R. W. Goodwin and M. F. Shea, *Proceedings of the 1991 Linac Conference,* October 1991

2. Arcnet as a Field Bus in the Fermilab Linac Control System, M. F. Shea, R. W. Goodwin, M. J. Kucera and S. Shtirbu, *Proceedings of the International Conference on Accelerator and Large Experimental Physics Control Systems.* Tsukuba, Japan, November 1991.